

Amendments to the Claims:

Please cancel claims 7 and 13, replace claims 1-3, 5, 6, 9-12, 15-19 and 34, all as shown below.

1. (Currently Amended) A method for shaping a surface of a workpiece, comprising:
placing the workpiece in a plasma processing chamber including an inductively-coupled plasma (ICP) torch having an outer tube to communicate a plasma gas to a distal end of the plasma torch and an inner tube nested within the outer tube to communicate a reactive precursor to the distal end,~~which does not require an electrode;~~
translating at least one of the workpiece and the plasma torch; and
~~using reactive atom plasma processing that:~~
communicating the plasma gas to the distal end;
generating a plasma discharge by transferring~~transfers~~ energy from a radio frequency (RF) power source to excite ~~[[a]]~~ the plasma gas, wherein a plasma sheath is formed between the distal end and the plasma discharge; and ~~[[a]]~~
introducing the reactive precursor to the plasma discharge through the inner tube to generate a reactive species in the plasma torch;
~~sustains a~~ sustaining the plasma discharge through collisions between the excited precursor and the plasma gas; and
~~shapes~~ shaping the surface of the workpiece by controlling a footprint of the plasma discharge from the plasma torch; and
~~directs~~ directing the plasma discharge to a target portion of the surface of the workpiece.
2. (Currently Amended) A method according to claim 1, wherein the step of ~~using reactive plasma processing to shape~~ shaping the surface of the workpiece comprises causing minimal or no damage to the workpiece underneath the surface.
3. (Currently Amended) A method according to claim 1, wherein the step of ~~using reactive plasma processing to shape~~ shaping the surface of the workpiece comprises removing material from the surface of the workpiece.

4. (Original) A method according to claim 1, further comprising:
rotating the workpiece with respect to the plasma torch.
5. (Currently Amended) A method according to claim 1, wherein the step of ~~plasma processing uses~~
directing the plasma discharge includes directing that is a the reactive species to the target portion.
6. (Currently Amended) A method according to claim 1, further comprising:
placing the reactive precursor in a central channel of the plasma torch.
7. (Canceled)
8. (Previously Presented) A method according to claim 1, further comprising:
using an argon gas as the plasma gas.
9. (Currently Amended) A method according to claim 1, further comprising:
controlling the mass flow of the reactive precursor into the plasma torch.
10. (Currently Amended) A method according to claim 1, further comprising:
controlling the mass flow of the reactive precursor into the plasma torch from between about 0
ml/min to about 2,000 ml/min.
11. (Currently Amended) A method according to claim 1, further comprising:
controlling the mass flow of the reactive precursor into the plasma torch from between about 0
ml/min to about 50,000 ml/min.
12. (Currently Amended) A method according to claim 1, further comprising:
selecting a concentration of the reactive precursor to be introduced into the plasma discharge a
central channel of the plasma torch.
13. (Canceled)

14. (Previously Presented) A method according to claim 1, further comprising:
coupling the RF energy to the plasma discharge in an annular region of the plasma torch.
15. (Currently Amended) A method according to claim 1, wherein the plasma torch includes an intermediate tube arranged between the outer tube and the inner tube, the method further comprising:
introducing an auxiliary gas into the intermediate tube ~~through a second of three concentric tubes in the plasma torch.~~
16. (Currently Amended) A method according to claim ~~[[1]]~~ 15, further comprising:
using ~~an~~ the auxiliary gas to keep the plasma discharge away from the inner tube ~~a central channel of the plasma torch.~~
17. (Currently Amended) A method according to claim ~~[[1]]~~ 15, further comprising:
using ~~an~~ the auxiliary gas to adjust the position of the plasma discharge relative to the distal end.
18. (Currently Amended) A method according to claim 1, further comprising:
controlling the size of the plasma discharge by selecting the inner diameter of an outer tube of the plasma torch.
19. (Currently Amended) A method according to claim 1, further comprising:
communicating ~~introducing~~ the plasma gas to the outer tube tangentially to form a vortex.
20. (Previously Presented) A method according to claim 1, further comprising:
metering the precursor and/or the plasma gas flow in the plasma torch.
21. (Previously Presented) A method according to claim 1, further comprising:
maintaining the temperature of the plasma torch between 5,000 and 15,000 degrees C.
22. (Previously Presented) A method according to claim 1, further comprising:
producing a volatile reaction product on the surface of the workpiece.

23. (Original) A method according to claim 1, further comprising:
maintaining the processing chamber at about atmospheric pressure.
24. (Previously Presented) A method according to claim 1, further comprising:
cleaning the surface of the workpiece with the plasma torch.
25. (Previously Presented) A method according to claim 1, further comprising:
polishing the surface of the workpiece with the plasma torch.
26. (Previously Presented) A method according to claim 1, further comprising:
planarizing the surface of the workpiece with the plasma torch.
27. (Previously Presented) A method according to claim 1, further comprising:
using a plasma torch with a multiple head to increase an etch rate of the plasma torch.
28. (Previously Presented) A method according to claim 1, further comprising:
using the precursor to control an etch rate of the plasma torch.
29. (Previously Presented) A method according to claim 28, wherein:
the precursor is any one of a solid, liquid, and gas.
- 30.-33. (Canceled)
34. (Currently Amended) A method for shaping an optic, comprising:
placing an optic workpiece in a plasma processing chamber including an inductively-coupled
plasma (ICP) torch having an outer tube to communicate a plasma gas to a distal end of the
plasma torch and an inner tube nested within the outer tube to communicate a reactive
precursor to the distal end, which does not require an electrode;
translating at least one of the optic workpiece and the plasma torch; and
~~using reactive atom plasma processing that:~~
communicating the plasma gas to the distal end;
generating a plasma discharge by transferring ~~transfer~~ energy from a radio frequency (RF) power

source to excite ~~[[a]]~~ the plasma gas, wherein a plasma sheath is formed between the distal end and the plasma discharge; and ~~[[a]]~~
introducing the reactive precursor to the plasma discharge through the inner tube to generate a reactive species in the plasma torch;
~~sustains a~~ sustaining the plasma discharge through collisions between the excited precursor and the plasma gas; and
~~shapes~~ shaping the surface of the optic workpiece by controlling a footprint of the plasma discharge from the plasma torch; and
~~directs~~ directing the discharge to a target portion of the surface of the optic workpiece.

Claims 35.-41. (Canceled)